

FIG. 1a



FIG. 1b

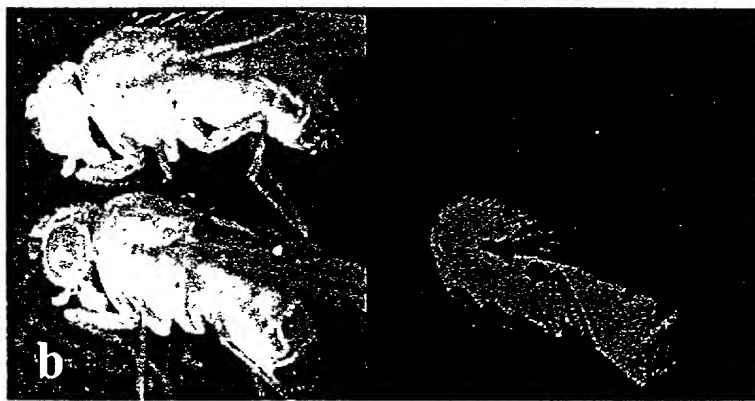


FIG. 1c

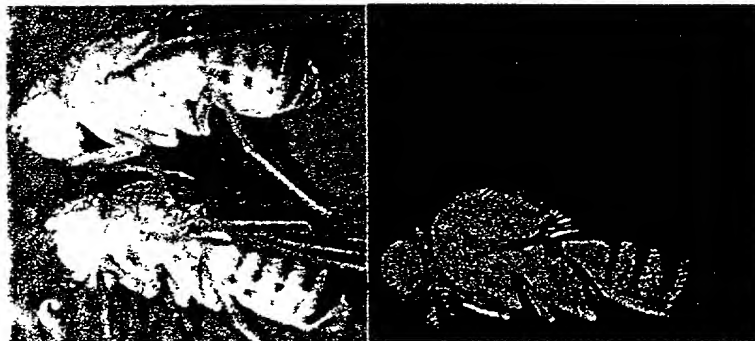


FIG. 2a

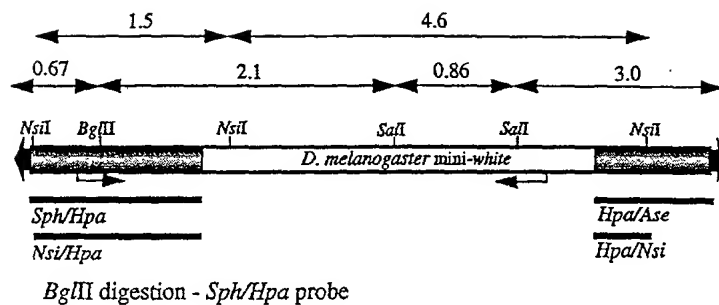
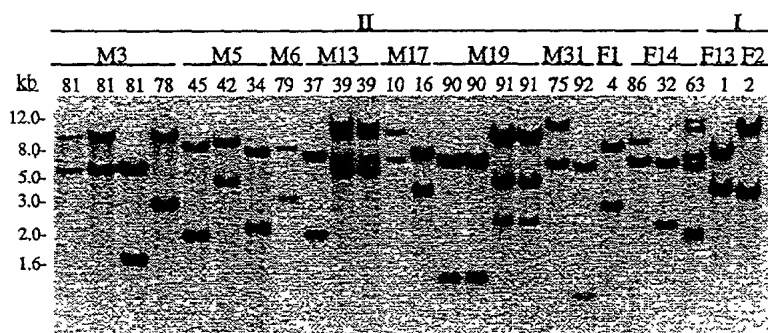
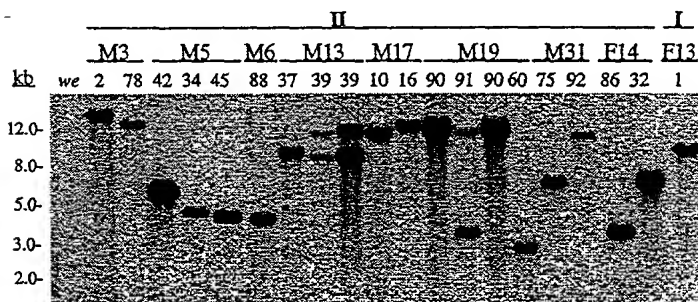


FIG. 2b



SaII digestion - *Hpa/Ase* probe

FIG. 2c



NsiI digestion - *Nsi/Hpa* + *Hpa/Nsi* probes

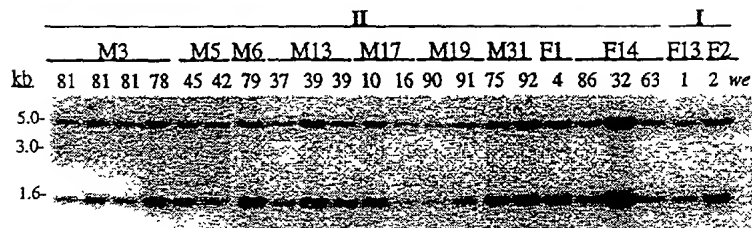


FIG. 2d

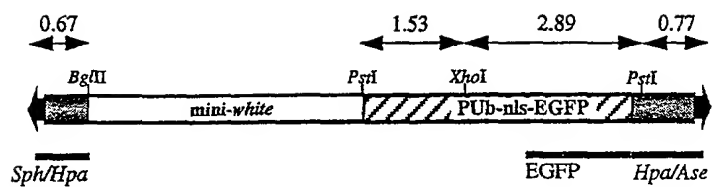


FIG. 3a

A- BglII digestion - Sph/Hpa probe B- XhoI digestion - Hpa/Ase probe

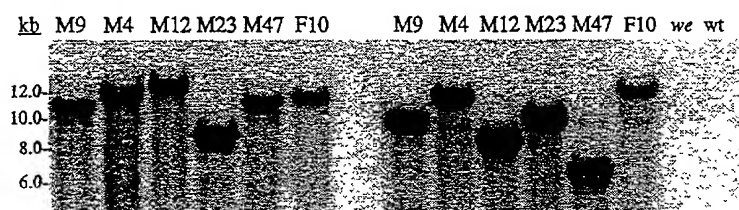


FIG. 3b

FIG. 3c

C- PstI digestion - Hpa/Ase+EGFP probe

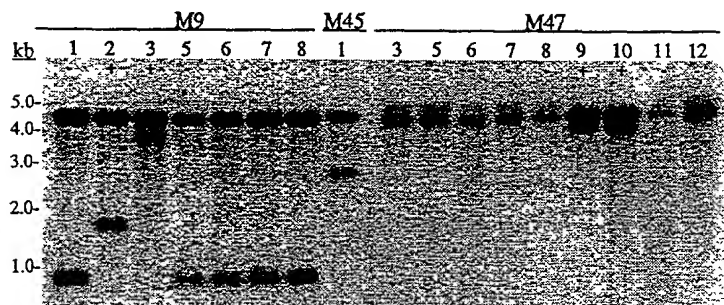


FIG. 3d



FIG. 4a

p3E1.2 aagcgcaaattcttttTTAA -*piggyBac*- TTAAataatagttttctaatt
 F1-2 aaaaagactgactatTTAA -*piggyBac*- TTAAtaagcacactgagtc
 M17-4 aaaatgtcgtctaggTTAA -*piggyBac*- TTAAagccgtatatcagat
 M31-6 aaatgaacgactttttTTAA -*piggyBac*- TTAAatgggttttttagttgt

FIG. 4b

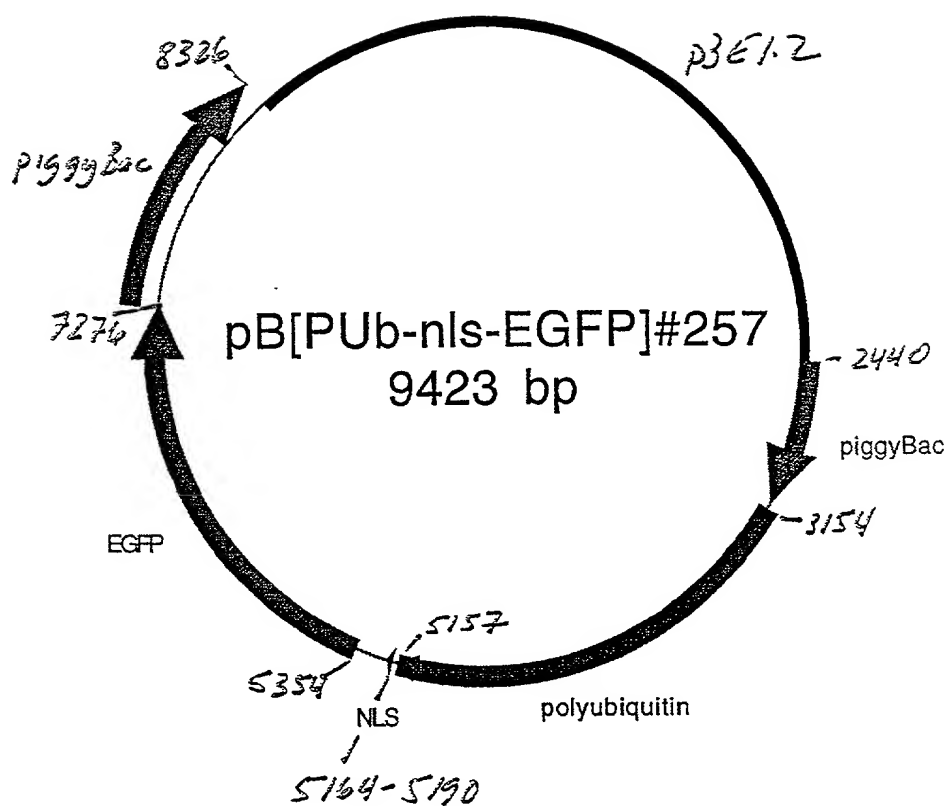


FIG. 5

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
GACGAAAGGG	CCTCGTGATA	CGCCTATTTT	TATAGGTTAA	TGTCATGATA	50
ATAATGGTTT	CTTAGACGTC	AGGTGGCACT	TTTCGGGGAA	ATGTGCGCGG	100
AACCCCTATT	TGTTTATTTT	TCTAAATACA	TTCAAATATG	TATCCGCTCA	150
TGAGACAATA	ACCCTGATAA	ATGCTTCAAT	AATATTGAAA	AAGGAAGAGT	200
ATGAGTATTC	AACATTTCCG	TGTCGCCCTT	ATTCCCTTTT	TTGCGGCATT	250
TTGCTTCCCT	GTTTTTGCTC	ACCCAGAAAC	GCTGGTGAAA	GTAAAAGATG	300
CTGAAGATCA	GTTGGGTGCA	CGAGTGGGTT	ACATCGAACT	GGATCTCAAC	350
AGCGGTAAAG	TCCTTGAGAG	TTTTCGCCCC	GAAGAACGTT	TTCCAATGAT	400
GAGCACTTTT	AAAGTTCTGC	TATGTGGCGC	GGTATTATCC	CGTATTGACG	450
CCGGGCAAGA	GCAACTCGGT	CGCCGCATAC	ACTATTCTCA	GAATGACTTG	500
GTGAGTACT	CACCACTCAC	AGAAAAGCAT	CTTACGGATG	GCATGACAGT	550
AAGAGAATT	TGCAGTGCTG	CCATAACCAT	GAGTGATAAC	ACTGCGGCCA	600
ACTTACTTCT	GACAACGATC	GGAGGACCGA	AGGAGCTAAC	CGCTTTTTTTG	650
CACAACATGG	GGGATCATGT	AACCTCGCCT	GATCGTTGGG	AACCGGAGCT	700
GAATGAAGCC	ATACCAAACG	ACGAGCGTGA	CACCACGATG	CCTGTAGCAA	750
TGGCAACAAC	GTTGCGCAAA	CTATTAACTG	GCGAACTACT	TACTCTAGCT	800
TCCCGGCAAC	AATTAATAGA	CTGGATGGAG	GCGGATAAAG	TTGCAGGACC	850
ACTTCTGCGC	TCGGCCCTTC	CGGCTGGCTG	GTTTATTGCT	GATAAATCTG	900
GAGCCGGTGA	GCGTGGGTCT	CGCGGTATCA	TTGCAGCACT	GGGGCCAGAT	950
GGTAAGCCCT	CCCGTATCGT	AGTTATCTAC	ACGACGGGGA	GTCAGGCAAC	1000
TATGGATGAA	CGAAATAGAC	AGATCGCTGA	GATAGGTGCC	TCACTGATT	1050
AGCATTGGTA	ACTGTCAGAC	CAAGTTTACT	CATATATACT	TTAGATTGAT	1100
TTAAAACTTC	ATTTTTAATT	TAAAAGGATC	TAGGTGAAGA	TCCTTTTTGA	1150
TAATCTCATG	ACCAAAATCC	CTTAACGTGA	GTTTTGCTTC	CACGTAGCGT	1200
CAGACCCCGT	AGAAAAGATC	AAAGGATCTT	CTTGAGATCC	TTTTTTTCTG	1250
CGCGTAATCT	GCTGCTTGCA	AACAAAAAAA	CCACCGCTAC	CAGCGGTGGT	1300
TTGTTTGCCG	GATCAAGAGC	TACCAACTCT	TTTTCCGAAG	GTAACTGGCT	1350
TCAGCAGAGC	GCAGATACCA	AATACTGTCC	TTCTAGTGTA	GCCGTAGTTA	1400
GGCCACCACT	TCAAGAACTC	TGTAGCAACG	CCTACATACC	TCGCTCTGCT	1450
AATCCTGTTA	CCAGTGGCTG	CTGCCAGTGG	CGATAAGTCC	TGCTCTACCG	1500
GGTTGGACTC	AAGACGATAG	TTACCGGATA	AGGCGCAGCG	GTCGGGCTGA	1550
ACGGGGGGTT	CGTGCACACA	GCCCAGCTTG	GAGCGAACGA	CCTACACCGA	1600
ACTGAGATAC	CTACAGCGTG	AGCATTGAGA	AAGCGCCACG	CTTCCCGAAG	1650
GGAGAAAGGC	GGACAGGTAT	CCGGTAAGCG	GCAGGGTCGG	AACAGGAGAG	1700
CGCACGAGGG	AGCTTCCAGG	GGGAAACGCC	TGGTATCTTT	ATAGTCCTGT	1750
CGGGTTTCGC	CACCTCTGAC	TTGAGCGTCC	ATTTTTGTGA	TGCTCGTCAG	1800

FIG. 6a

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
GGGGGCGGAG	CCTATGGAAA	AACGCCAGCA	ACGCGGCCCTT	TTTACGGTTC	1850
CTGGCCCTTTT	GCTGGCCCTTT	TGCTCACATG	TTCTTTCCCTG	CGTTATCCCC	1900
TGATTCTGTG	GATAACCGTA	TTACCGCCCTT	TGAGTGAGCT	GATACCGCTC	1950
GCCGCAGCCG	AACGACCGAG	CGCAGCGAGT	CAGTGAGCGA	GGAAGCGGAA	2000
GAGGCGCCAA	TACGCAAACC	GCTCTCTCCC	GCGCGTTGGC	CGATTTCATTA	2050
ATGCAGCTGG	CACGACAGGT	TTCCCGACTG	GAAAGCGGGC	AGTGAGCGCA	2100
ACGCAATTAA	TGTGAGTTAG	CTCACTCATT	AGGCACCCCA	GGCTTTACAC	2150
TTTATGCTTC	CGGCTCGTAT	GTTGTGTGGA	ATTGTGAGCG	GATAACAATT	2200
TCACACAGGA	AACAGCTATG	ACCATGATTA	CGAATTCCAG	CTCGGTACCC	2250
GGGGATCCTC	TAGAGTCGAC	CTGCAGGCAT	GCAAGCTTGC	ATGCCTGCAG	2300
GTCGACGCTC	GCGCGACTTG	GTTTGCCATT	CTTTAGCGCG	CGTCGCGTCA	2350
CACAGCTTGG	CCACAATGTG	GTTTTTTGTCA	AACGAAGATT	CTATGACGTG	2400
TTTAAAGTTT	AGGTGCGAGTA	AAGCGCAAAT	CTTTTTTAA	CCTAGAAAGA	2450
TAGICTGCGT	AAAATTGAAG	CATGCATTCT	TGAAATATTG	CTCTCTCTTT	2500
CTAAATAGCG	CGAATCCGTC	GCTGTGCATT	TAGGACATCT	CAGTCGCCGC	2550
TTGGAGCTCC	CGTGAGGCGT	GCTTGTCAT	GCGGTAAGTG	TCACTGATTT	2600
TGAACTATAA	CGACCGCGTG	AGTCAAAATG	ACGCATGATT	ATCTTTTACG	2650
TGACTTTTAA	GATTTAACTC	ATACGATAAT	TATATTGTTA	TTTCATGTTT	2700
TACTTACGTG	ATAACTTATT	ATATATATAT	TTTCTTGTTA	TAGATATCGT	2750
GACTAATATA	TAATAAAATG	GGTAGTTCTT	TAGACGATGA	GCATATCCTC	2800
TCIGCTCTTC	TGCAAAGCGA	TGACGAGCTT	GTIGGTGAGG	ATTCTGACAG	2850
TGAAATATCA	GATCACGTAA	GTGAAGATGA	CGTCCAGAGC	GATACAGAAG	2900
AAGCGTTTAT	AGATGAGGTA	CATGAAGTGC	AGCCAACGTC	AAGCGGTAGT	2950
GAAATATTAG	ACGAACAAAA	TGTTATTGAA	CAACCAGGTT	CTTCATTGGC	3000
TTCTAACAGA	ATCTTGACCT	TGCCACAGAG	GACTATTAGA	GGTAAGAATA	3050
AACATTGTTG	GTCAACTTCA	AAGTCCACGA	GCGGTAGCCG	AGTCTCTGCA	3100
CTGAACATTG	TCAGATCTCG	AGCTCAAGCT	TGGAATTCTG	CAGTCGACGG	3150
TACCCGATCT	TGTGCGCGGA	ACGCAGCGAC	AGAGATTCCA	ATGTGTCCGT	3200
ATCTTTTACG	CTTTTGGCCCT	TCAGTTCCAG	ACGAAGCGAC	TGGCGATTCC	3250
CGTGTGGGGT	CTGCTTCAGG	GTCTTGTGAA	TTAGGGGCGG	CAGATCGCCG	3300
ATGGGCGTGG	CGCCGGAGGG	CACCTTCACC	TTGCCGTACG	GCTTGTCTTT	3350
CTTCGCGTTC	AAAATCTCCA	GCTCCATTTT	GCTTTCGGTG	CGCTTGCAAT	3400
CAGTACTGTC	CAAAATCGAA	AATCGCCGAA	CCGTAGTGTG	ACCGTGGGGG	3450
GCTCTGCGAA	AATAAACTTT	TTTAGGTATA	TGGCCACACA	CGGGGAAAGC	3500
ACAGTGGATT	ATATGTTTTA	ATATTATAAT	ATGCAGGTTT	TCATTACTTA	3550
TCCAGATGTA	AGCCCACTTA	AAGCGATTTA	ACAATTATTT	GCCGAAAGAG	3600

FIG. 6b

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
TAAAAACAAA	TTTCACITTA	AAATGGATTA	AGAAAAGCTT	GIGTAAGATT	3650
ATGCGCAGCG	TTGCCAGATA	GCTCCATTIA	AAACACTTCA	AAAACAATAA	3700
GTTTTGAAAA	TATATACATA	AATAGCAGTC	GTTGCCGCAA	CGCTCAACAC	3750
ATCACACTTT	TAAAACACCC	TTTACCTACA	CAGAATTACT	TTTTAAATTT	3800
CCAGTCAAGC	TGCGAGTTTC	AAAATTATAG	CCGGTAGAGA	AGACAGTGCT	3850
ATTTCAAAAG	CAAATAAAT	AAACACCAAT	CCTAACAAGC	CTTGGACTTT	3900
TGTAAGTTTA	GATCAAAGGT	GGCATTGCAT	TCAATGICAT	GGTAAGAAGT	3950
AGGTCGICTA	GGTAGAAATC	CTCATTACAG	CGGTCAAGTC	AGTACGAGAA	4000
AGGTCCTCAAT	TTGAAATTGT	CTTAAAAATA	TTTTATTGTT	TTGTAAGTGT	4050
GTCAGTTTAA	ACGAAAAACA	CAAAAAAATA	GTGATACACA	GAAATCATAA	4100
AAAATTTTAA	TACAAGGIAT	TCGTACGIAT	CAAAAACATT	TCGGCACAAT	4150
TTTTTTTCTC	TGTAATAAAG	TGTTACGAAC	ACTACGGIAT	TTTTTAGTGA	4200
TTTTCAACGG	ACACCGAAGG	TATATAAACA	GCGTTCCGCA	ACGGTCGCTT	4250
TCAAAACCAA	TTGACATTTG	CAGCAGCAAG	TACAAGCAGA	AAGTAAAGCG	4300
CAATCAGCGA	AAAATTTTATA	CTTAATTGTT	GGTGAATTAA	GTACAATTAA	4350
AAGAACATTC	TCGAAAGTCA	CAAGAAACGT	AAGTTTTTAA	CTCGCTGTTA	4400
CCAATTAGTA	ATAAGAGCAA	CAAGACGTTG	AGTAATTTC	AGAAAACTG	4450
CATTTCAAGG	TCCTTGTTCG	GCCATTTTTT	TTTTATTCAA	CGCTCTACGT	4500
AATTACAAAA	TAAGAAATTG	GCAGCCACGC	ATCTTGTTTT	CCCAATCAAT	4550
TGGCATCAAA	ACGCAAACAA	ATCTATAAAT	AAAACCTGCG	TGTTGATTTT	4600
CGCCAAGATT	TATTGGCAAA	TTGTGAAATT	CGCAGTGACG	CATTTGAAAA	4650
TTCGAGAAAT	CACGAACGCA	CTCGAGCATT	TGTGTGCATG	TTATTAGTTA	4700
GTTAGTTCTT	TGCTTAATTG	AAGTATTTTA	CCAACGAAAT	CCACTTATTT	4750
TTAGCTGAAA	TAGAGTAGGT	TGCTTGA AAC	GAAAGCCACG	TCTGGAAAT	4800
TTCTTATTGC	TTAGTAGTTG	TGACGTCACC	ATATACACAC	AAAATAATGT	4850
GTATGCATGC	GTTTCAGCTG	TGTATATATA	CATGCACACA	CTCGCATTAT	4900
GAAAACGATG	ACGAGCAACG	GAACAGGTTT	CTCAACTACC	TTTGTTCCTG	4950
TTTCTTCGCT	TTCTTTTGT	CCAATATTCT	TAGAGGGTTA	ATAGGGGTTT	5000
CTCAACAAAG	TTGGCGTCTG	TAAATAAGTT	TCCCATTTTT	ATTCCCCAGC	5050
CAGGAAGTTA	GTTTCAATAG	TTTTGTAAAT	TCAACGAAAC	TCATTTGATT	5100
TCGTACTAAT	TTTCCACATC	TCTATTTTGA	CCCGCAGAAT	AATCCAAAAT	5150
GCAGATCGGG	GATCCCACCC	CACCCAAGAA	GAAGCGCAAG	GTTGAGGACG	5200
ATCCCGTCTG	TTTACAAAGT	CGTGACTGGG	AAAACCTTGG	CGTTACCCAA	5250
CTTAATCGCC	TTGCAGCACA	TCCCCCTTTC	GCCAGCTGGC	GTAATAGCGA	5300
AGAGGCCCGC	ACCGATCGCC	CTTCCCAACA	GTTGCGGTCT	ACTCTAGAGG	5350
ATCCCCGGGA	TCCACCGGTC	GCCACCATGG	TGAGCAAGGG	CGAGGAGCTG	5400

FIG. 6c

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
TTTTTATTTA	TGCAGAGGCC	GAGGCGGCT	CGGCTCTGA	GCTATTCCAG	7250
AAGTAGTGAG	GAGGCTTTTT	TGGAGGAACC	ATTGTGGGAA	CCGTGCGATC	7300
AAACAAAGC	GAGATACCGG	AAGTACTGAA	AAACAGTGGC	TCCAGGCCAG	7350
TGGGAACATC	GATGTTTTGT	TTTGACGGAC	CCCTTACTCT	CGTCTCATAT	7400
AAACCGAAGC	CAGCTAAGAT	GGTATACTTA	TTATCATCTT	GIGATGAGGA	7450
TGCTTCTATC	AACGAAAGTA	CCGGTAAACC	GCAAATGGTT	ATGTATTATA	7500
ATCAAATAA	AGGCGGAGTG	GACACGCTAG	ACCAAATGIG	TTCGTGATG	7550
ACCTGCAGTA	GGAGACGAA	TAGGTGGCCT	ATGGCATTAT	TGTACGGAAT	7600
GATAAACATT	GCGTGCATAA	ATTCTTTTTAT	TATATACAGC	CATAATGTCA	7650
GTAGCAAGGG	AGAAAAGGTC	CAAAGTCGCA	AAAAATTTAT	GAGAAACCTT	7700
TACATGAGCC	TGACGTCATC	GTTTATGCGT	AAGCGTTTAG	AAGCTCCTAC	7750
TTTGAAGAGA	TATTTGCGCG	ATAATATCTC	TAATATTTTG	CCAAATGAAG	7800
TGCCTGGTAC	ATCAGATGAC	AGTACTGAAG	AGCCAGTAAT	GAAAAACGT	7850
ACTTACTGTA	CTTACTGCCC	CTCTAAAATA	AGGCGAAAGG	CAAATGCATC	7900
GTGCAAAAAA	TGCAAAAAAG	TTATTTGTGCG	AGAGCATAAT	ATTGATATGT	7950
GCCAAAGTTG	TTTCTGACIG	ACTAATAAGT	ATAATTTGTT	TCTATTATGT	8000
ATAAGTTAAG	CTAATTACTT	ATTTTATAAT	ACAACATGAC	TGTTTTTAAA	8050
GTACAAAATA	AGTTTATTTT	TGTAAAAGAG	AGAATGTTTA	AAAGTTTTGT	8100
TACTTTATAG	AAGAAATTTT	GAGTTTTTGT	TTTTTTTTTAA	TAAATAAATA	8150
AACATAAATA	AATTGTTTGT	TGAATTTATT	ATTAGTATGT	AAGTGTAAT	8200
ATAATAAAAC	TTAATATCTA	TTCAAATTAA	TAAATAAACC	TCGATATACA	8250
GACCGATAAA	ACACATGCGT	CAATTTTACG	CATGATTATC	TTTAACGTAC	8300
GTCACAATAT	GATTATCTTT	CTAGGGTTAA	ATAATAGTTT	CTAATTTTTT	8350
TATTATTTCAG	CCTGCTGTCG	TGAATAACGT	ATATCTCAAC	GCTGCTGTCG	8400
AGATTGTCGT	ATTCTAGCCT	TTTTAGTTTT	TGCTCATCG	ACTTGATATT	8450
GTCCGACACA	TTTTGCTCGA	TTTGCGTTTT	GATCAAAGAC	TTGAGCAGAG	8500
ACACGTTAAT	CAACTGTTCA	AATTGATCCA	TATTAACGAT	ATCAACCCGA	8550
TGCGTATATG	GTGCGTAAAA	TATATTTTTT	AACCTCTTA	TACTTTGCAC	8600
TCTGCGTTAA	TACGCGTTG	TGTACAGACG	TAATCATGTT	TTCTTTTTTG	8650
GATAAACTC	CTACTGAGTT	TGACCTCATA	TTAGACCCCTC	ACAAGTTGCA	8700
AAACGIGGCA	TTTTTTTACCA	ATGAAGAATT	TAAAGTTATT	TTAAAAAATT	8750
TCATCACAGA	TTTAAAGAAG	AACCAAAAT	TAAATTATTT	CAACAGTTTA	8800
ATCGACCAGT	TAATCAACGT	GTACACAGAC	GCGTCGGCAA	AAAACACGCA	8850
GCCCGACGIG	TGGCTAAAA	TTATTAAATC	AACTTGTTGT	ATAGTCACGG	8900
ATTTGCCGTC	CAACGTGTTT	CTCAAAAAGT	TGAAGACCAA	CAAGTTTACG	8950
GACACTATTA	ATTATTTGAT	TTTGCCCCAC	TTCATTTTGT	GGGATCACAA	9000

FIG. 6e

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
TTTTGTTATA	TTTAAACAA	AGCTTGGCAC	TGGCCGTGCT	TTTACAACGT	9050
CGTGACTGGG	AAAACCCCTGG	CGTTACCCAA	CTTAATCGCC	TTGCAGCACA	9100
TCCCCCTTTC	GCCAGCTGGC	GTAATAGCGA	AGAGGCCCGC	ACCGATCGCC	9150
CTTCCCAACA	GTGCGCAGC	CTGAATGGCG	AATGGCGCCT	GATGCGGTAT	9200
TTTCTCCTTA	CGCATCTGTG	CGGTATTTCA	CACCGCATAT	GGTGCACTCT	9250
CAGTACAATC	TGCTCTGATG	CCGCATAGTT	AAGCCAGCCC	CGACACCCGC	9300
CAACACCCGC	TGACGCGCCC	TGACGGGCTT	GTCTGCTCCC	GGCATCCGCT	9350
TACAGACAAG	CTGTGACCGT	CTCCGGGAGC	TGCATGTGTC	AGAGGTTTTTC	9400
ACCGTCATCA	CCGAAACGCG	CGA			9423

FIG. 6f



FIG. 7a



FIG. 7b

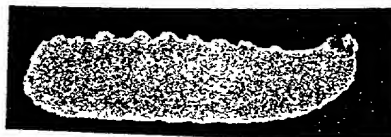


FIG. 7c



FIG. 7d



FIG. 7e



FIG. 8a



FIG. 8b



FIG. 8c



FIG. 8d

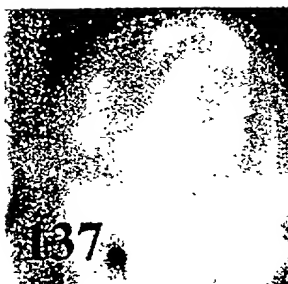


FIG. 8e



FIG. 9a



FIG. 9b

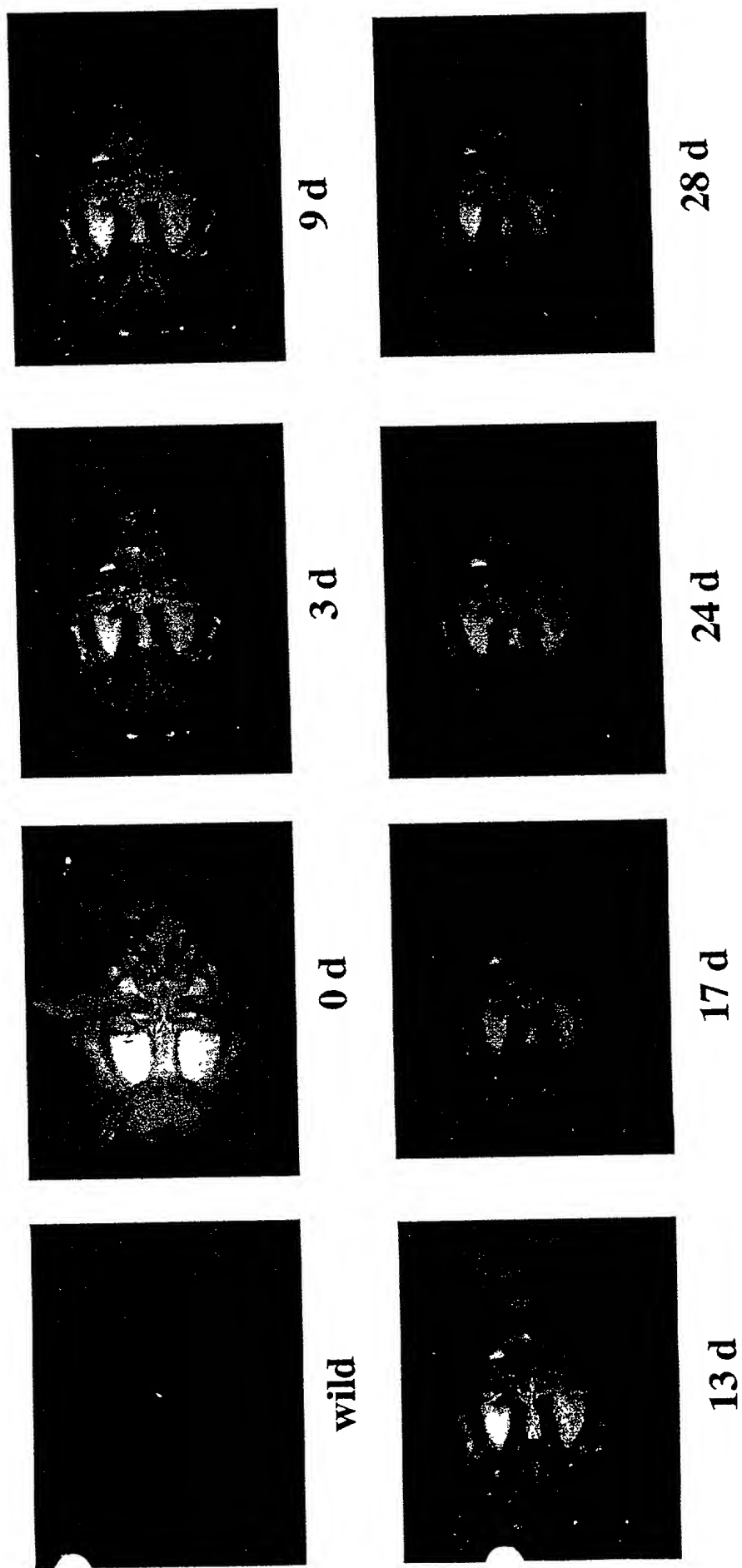


FIG. 10

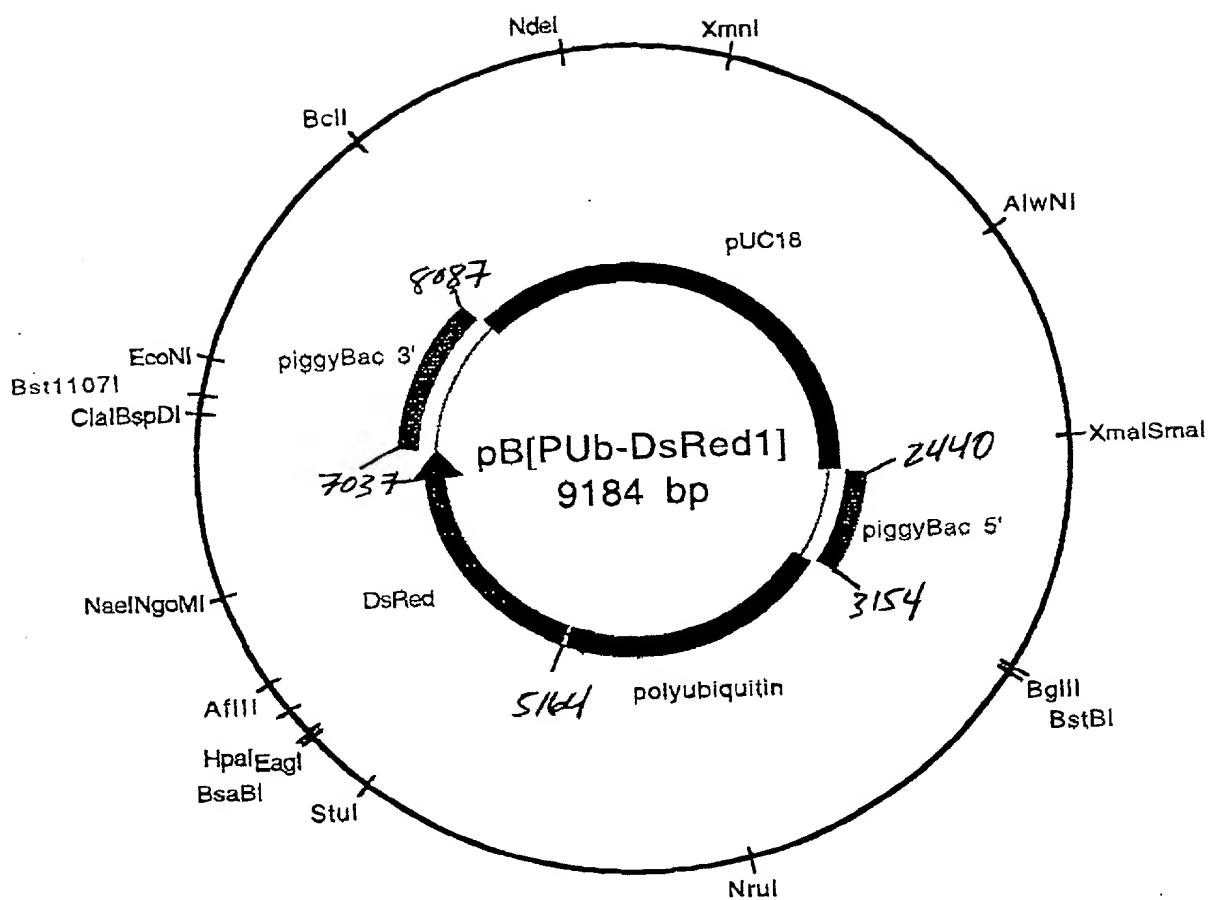


FIG. 11

pB[DsRed1] Transgenic Drosophila

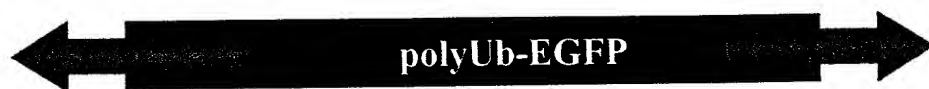
adult

pupa

larva

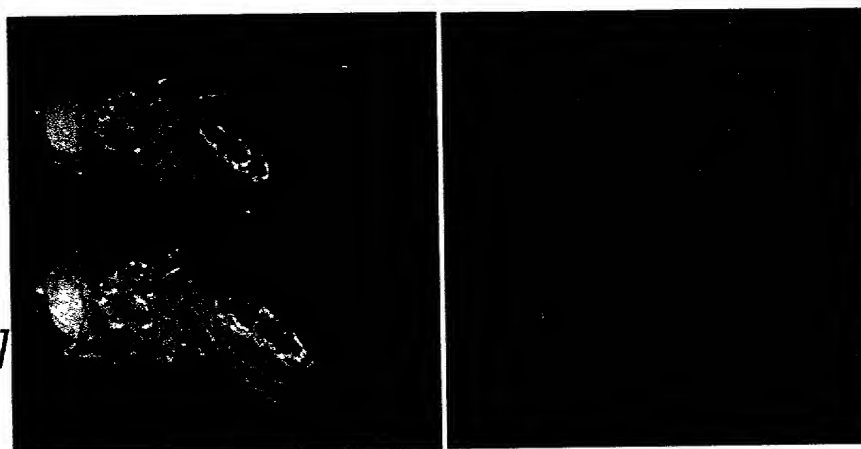
FIG. 12

Expression of DsRed in *Drosophila* transformed
with pB[PUB-DsRed]



white host

Dm[pBDsRed1]
transformant

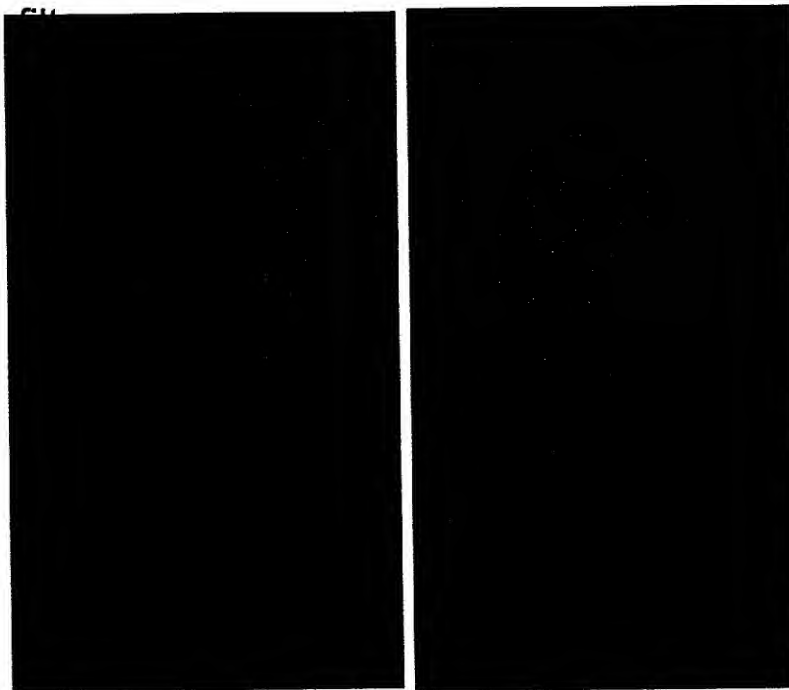


Brightfield

UV - Texas Red filter

Figure 13

Expression of DsRed in Caribfly transformed
with pB[PUB-DsRed1] under a Texas Red



ventral

dorsal

Figure 14

Expression of DsRed in Caribfly transformed with pB[PUB-DsRed1]

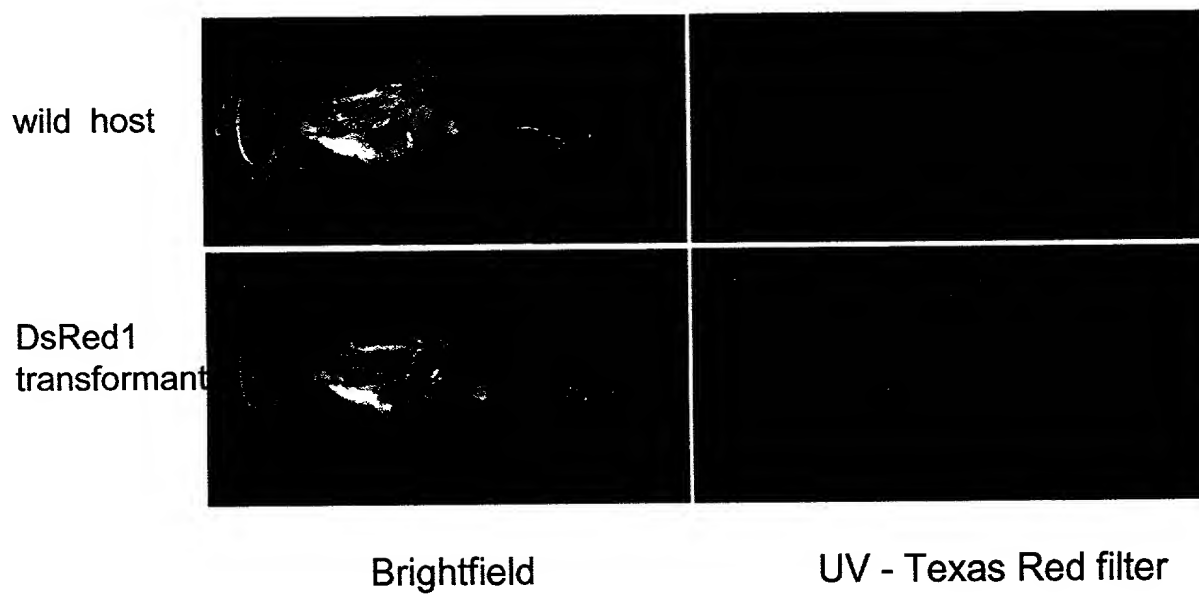


Figure 15